UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION
National Archives and Records Service
Washington, DC 20408

DATE: October 25, 1977

Y TO
N OF: NAP

JECT: Warren Commission Exhibits - Neutron Activation Analysis

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Attached is my report covering NARS involvement in the Neutron Activation Analysis of specified Warren Commission Exhibit items as requested by the House of Representatives Select Committee on Assassinations.

James L. Gear
JAMES L. GEAR
Director
Preservation Services Division

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Neutron Activation Analysis of Warren Commission Exhibit Items

At the request of the House of Representatives Select Committee on Assassinations, ten items from the Warren Commission Exhibit (CE 141, 399, 567, 569, 573, 840, 841, 842, 843, and the piece of curbstone) were transported to the University of California, Irvine, California for neutron activation analysis.

Dr. Vincent P. Guinn, Professor of Chemistry, University of California, was the forensic scientist selected by the Select Committee to perform the analysis.

The samples were removed from NARS on September 9, 1977 and taken to California. While in California the samples were kept at night in a locked vault at the Federal Records Center, Laguna Niguel, California.

Security of the samples was maintained for NARS by the Federal Protective Service who provided personnel for security escort and transportation to and from the airports (Dulles International and Los Angeles), Los Angeles to Laguna, Niguel and the University of California at Irvine. The Security personnel remained with me at the University during the day.

The Warren Commission exhibit items were placed in two locked containers for transportation and both containers were carried onto and off the airplane by FPS personnel.

The first meeting with Dr. Guinn was at Irvine on September 12, 1977 at 1:30 pm. At that time, Dr. Guinn examined each sample and outlined a schedule for testing to begin at 10:00 am on September 13, 1977. At that time, Dr. Guinn did decide that there was not sufficient residue on the curbstone to remove for testing without contamination from the stone itself. Thus no tests were performed on the curbstone. In addition, this eliminated having to transport this heavy item between the Records Center and Irvine.

On September 13, 1977, at the University, the samples were removed from their containers and placed in marked vials. The following samples were tested:

CE 842 - 2 samples
CE 843 - 2 samples
CE 840 - 2 samples
CE 399 - 1 sample
CE 567 - 1 sample
CE 573 - 1 sample

Each sample was weighed, washed with water and acetone, and then subjected to a 40 second neutron activation. The samples were then measured for neutron activation. During the procedure, the samples had to be transferred to clean vials. Each time both Dr. Guinn and myself verified the transfer. Since the samples were to be subjected to a one hour nuclear bombardment later the next day, they were left in the vials. There were no small samples of CE 399, 567, and 573. Thus Dr. Guinn, using a drill, took a sample from CE 399, and using a scalpel cut a sample from 567 and 573.

On September 14, 1977, CE 141 which had never been tested was opened and enough material was drilled from the butt end of the bullet to provide two samples. After sampling the cartridge was reloaded. These samples were added to the other samples and exposed for one hour. The data from the one hour neutron activation concluded the tests.

Each sample was then transferred from the vials to its original container. In the case of CE 141, 399, 567, and 573, the samples were left in the vials and placed in the original container. Again each transfer of a sample was verified by Dr. Guinn and myself.

On September 15, 1977, all materials were returned to the National Archives building and their respective storage area 6-W-3.

The following week Dr. Guinn requested that weights of CE 399 (the bullet) and the samples removed from CE 141 be rechecked. The samples were obtained, and reweighed in NARS Preservation Research Laboratory.

Documentary photographs taken by myself of the tests and procedures are attached(including camera negatives) They are identified as follows:

1 - Set-up for transferring samples to vials

2-5 - CE 842 - Transfer to vial

6 - CE 843 - Transfer to vial

7 - CE 840 - Transfer to vial

8-11 - CE 399 - Drilling and removing sample and placement in vial

12-15 - CE 567 - Cutting to obtain samples (2) and placement in vial

16-19 - CE 573 - Cutting to obtain sample and placement in vial

20 - weighing samples

21 - washing samples with acetone and water to remove oils and dirt

22 - Reactor control panel

23 - Top row of vials contain samples CE 842 - 2, CE 843 -2, 840 - 2, 399 - 1, CE 567 - 1, CE 573 - 1, (9 vials with samples)

Middle row - 2 vials (standards)

Lower row - 10 vials (9 for samples plus 1 additional standard)

24 - Vacuum holder used to transport samples to reaction chamber

25 - Counter into which samples were inserted after exposure

26 - Data bank equipment used to read and store sample data

27 - Samples (in vials) were placed in tube, and tube inserted into vacuum holder for transport to reactor chamber

28 - Sample being returned from reactor after exposure

29 - Tube used to transport vials and samples to reactor chamber

30-37 - CE 141 - Removal of bullet from casing

38-41 - Removal of sample from butt end of bullet

42-50 - Replacement of powder and bullet in casing.

51 - Preparing tubes to hold vials and samples for one hour reactor exposure

52 - Placement of sample in reactor tube

53 - Reactor core

54-55 - General view of reactor area

56 - Data bank and computer hook up for storage and treatment of input data

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